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Council of the County Palatine of Durham.

REPORT

OF THE

MEDICAL OFFICER OF HEALTH,

T. EUSTACE HILL, O.B.E., M.A., M.B., B.Sc.,

AND OTHER RECORDS,

FOR THE YEARS

1916, 1917, AND 1918.

PRINTED BY THE
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Table A1.—URBAN DISTRICTS.—Deaths at Certain Ages and from Certain Specified Causes.

Table B.—RURAL DISTRICTS.—Population, Birth-rate, Death-rate, &c.

Table B1.—RURAL DISTRICTS.—Deaths at Certain Ages and from Certain Specified Causes.

THE COUNCIL OF THE COUNTY PALATINE OF DURHAM.

To THE CHAIRMAN AND MEMBERS OF THE HEALTH COMMITTEE.

GENTLEMEN,

I have much pleasure in presenting my Annual Reports for the three War years 1916, 1917 and 1918. It is unfortunate that the issue of these reports has been so long delayed but, as explained in my report for the year 1915, the delay was unavoidable owing to the disorganisation of the County Health Department in consequence of nearly the whole of the medical staff and a large proportion of the clerical staff being away on military service from 1914 until after the conclusion of the War.

During the three years under review very little progress in sanitary work was possible and the size of this report is, in consequence, considerably curtailed, compared with reports for pre-War years.

The Housing question still remains the most serious sanitary problem with which we have to deal and although at the present moment, in almost every sanitary district, houses are in course of erection under the Government Scheme, very little building by private enterprise has been undertaken, and I am afraid even when the present housing schemes are completed the housing of the county population will be less satisfactory than it was at the time of the last Census, when no less than 28.5 per cent. of the houses in the administrative county were overcrowded as compared with 9.1 per cent. for England and Wales.

As regards the vital statistics for the county during the years 1916-1918 it will be noted that the birth-rate was considerably in excess of that for the country generally, while, with the exception of the year 1918, the total death-rate compared very favourably with those of previous years. In 1918, the total death-rate showed a considerable increase owing to the large number of deaths from the fatal epidemic of Influenza which was prevalent throughout the

country. It will be noted that as a result of the epidemic during 1918, 2,924 deaths from Influenza occurred, equal to an annual death-rate of 3.15 per 1,000 population, while the death-rate from acute lung diseases was 3.24 per 1,000 population, as compared with 2.42 in 1916 and 2.31 in 1917, this increase during 1918 being, undoubtedly, largely the result of the Influenza epidemic. It will also be noted that but for this high mortality from Influenza the total death-rate for 1918 would have been as favourable as for the two previous years.

Except for a serious epidemic of Enteric Fever in the Boldon Colliery area of the South Shields Rural District during 1916, which also affected part of the Felling Urban District, the disease having been spread by infected ice cream, there was no serious outbreak in the county area during the three years, and the prevalence and mortality from this disease shows a gratifying decline as compared with the average for previous years.

As was the case throughout the country generally, there was a slight increase in the mortality from Pulmonary Tuberculosis though to a less extent in this county than in the country generally, and the mortality from Tuberculosis in this administrative county remains considerably below that for England and Wales.

Compared with most previous years the Infant Mortality Rate for the three years under review was very satisfactory, though the figures for this county still remain considerably in excess of those of England and Wales and even our large towns. I have no doubt whatever but that this improvement in the Infant Mortality Rate is very largely the result of the attention given to this matter by the County Council through the County Health and Education Committees.

Your obedient Servant,

T. EUSTACE HILL.

August, 1921.

AREA.

The area of the Administrative County during the three years under review remained unchanged and is 637,014 acres.

POPULATION.

Owing to the War conditions, the enlistment of large numbers of the male population, and the influx into the County of a considerable number of munition, etc., workers, a reliable estimate of the population during the years 1916, 1917, & 1918 was impossible, so for the purpose of calculating the rates, etc., in the statistical tables in this combined report, the estimated population for 1914, viz., 926,986 has been used. I have no reason to believe that the population has been overestimated.

VITAL STATISTICS.

In the following table the chief vital statistics of the Administrative County during 1916, 1917, and 1918, and of its Urban and Rural Districts are compared with those of England and Wales:—

Rate per 1,000 Population.	Total Urban Districts.		Rural Districts.		Administrative County.		England and Wales.	
	1916	1917	1918	1916	1917	1918	1916	1917
Birth-rate	25.47	22.59	24.78	24.58	23.21	24.66	25.20	23.00
Death-rate ("Crude")	13.96	14.23	17.54	12.96	12.47	16.32	13.58	13.50
Infant Mortality Rate per 1000 births	121	116	116	120	115	121	116	111
Zymotic Death-rate.....	1.01	1.45	1.30	0.99	1.12	1.25	1.01	1.31
Smallpox .....	...	...	...	...	...	...	...	...
Scarlet Fever	0.05	0.04	0.09	0.08	0.02	0.05	0.06	0.03
Diphtheria.....	0.23	0.22	0.19	0.17	0.12	0.09	0.20	0.18
"Fever" (Enteric & Continued).....	0.05	0.02	0.03	0.09	0.02	0.04	0.08	0.03
Measles	0.08	0.42	0.19	0.03	0.28	0.26	0.05	0.39
Whooping Cough.....	0.27	0.18	0.35	0.19	0.14	0.30	0.23	0.16
Diarrhoea & Enteritis (under 2 years).....	0.31	0.49	0.42	0.39	0.51	0.48	0.35	0.50
Diarrhoea & Enteritis (under 2 years) per 1000 births.....	12.41	21.69	17.15	16.03	22.04	19.50	14.03	21.85
							18.22	12.47
							12.18	10.99

Compared with 1915, there was a fall in the birth-rate of 2·5 per 1,000 population in 1916, a further drop to 4·7 in 1917 whilst in 1918 a slight revival was noticeable, the rate only showing a decline of 2·9 per 1,000 population. The total death-rate showed a marked decrease in 1916 and 1917 in comparison with 1915, viz., 2·6 per 1,000 population, but there was an increase of 0·9 over the 1915 rate during 1918. The zymotic death-rate during the three years was less than half the 1915 rate, and the infant mortality rates for the same period also compare favourably with that for 1915.

INFECTIOUS DISEASES.

The mortality from all the chief infective diseases fell considerably, during the period under review, an especially satisfactory feature being the low rates for Measles and Diphtheria, as compared with the year 1915.

One case of Smallpox occurred in the Administrative County, during the early part of the year 1916.

The case occurred in an eating house in the Willington Urban District, and presented such potential possibilities as regards "contacts" that fears were entertained of the disease spreading. The usual precautionary measures were taken, and I also circulated the whole of the medical practitioners in the County asking them to keep a special look out for new cases, but fortunately the fears proved groundless.

Primary cases of Measles became notifiable on the 1st January, 1916, but there was no serious epidemic of this disease during the three years.

In the last week of September, 1916, a serious outbreak of Enteric Fever occurred at Boldon, in the South Shields Rural District, and a number of cases occurred in the adjoining Felling Urban District (Wardley Colliery). The Deputy County Medical Officer immediately visited the district and, in conjunction with Dr. Hutchinson of the Local Government Board, conferred with the Medical Officer of Health regarding the cause of the outbreak, and the preventive measures, etc., to be taken. The epidemic was the subject of an able report, dated 9th January, 1917, by the

Deputy County Medical Officer, copies of which were sent to the Local Government Board, and it was clearly proved that the outbreak was caused by eating ice-cream or drinking milk from an Italian merchant's premises, on which a case of Enteric Fever had occurred and was being nursed therein. The premises were found to be dirty and the business badly conducted. The sale of ice-cream and milk was stopped, and all preventive measures taken under the direction of Dr. Hutchinson and the Deputy County Medical Officer. During the period 19th August—2nd December, 1916, 246 cases of Enteric Fever were notified from this district, 9 deaths occurring. 80% of the cases notified had eaten the ice-cream and 11% partaken of the milk from the shop. During the investigations into the cause of the disease some very bad cases of overcrowding and insanitary conditions were brought to light.

During the same year, another small outbreak of Enteric Fever occurred at Ferryhill Station, in the Sedgefield Rural District, between May and September 40 cases being notified and without doubt several mild cases escaped notification. Together with a Medical Inspector of the Local Government Board I made careful investigation into the causes of the outbreak, and copies of my report on this matter were forwarded to the Local Government Board. Though we were unable to discover the definite cause of the outbreak we found many insanitary conditions which would tend to favour the prevalence of Enteric Fever. The water supply was suspected, as, though the supply is from the mains of the Weardale and Consett Water Company, this at certain times was augmented by a supply from an open service reservoir near Ferryhill Station. Just before the outbreak the land in the immediate vicinity of the open reservoir was heavily manured with very offensive ashpit refuse, and it is probable that polluting matter was blown into the water by the wind. Moreover, throughout the infected area, serious sanitary defects were noted in connection with drainage, sewerage, scavenging and excrement disposal.

There was also an outbreak of Diphtheria towards the end of 1916 in the Marley Hill area of the Whickham Urban District. A number of children attending the County Elementary School were attacked and the school closed for disinfection and cleansing.

The initial cause of the outbreak was not discovered and there were no defects of sanitation at the school likely to produce the disease. Quite near to the school was a refuse tip in a position totally unsuitable for a tip, and complaints of nuisances from it were made. The District Medical Officer of Health and the County Health Inspector both issued special reports on the outbreak, and subsequently the Local Government Board urged upon the Whickham Urban District Council the necessity for finding a more suitable position for the tip.

During 1917 there was nothing particular to report, but in 1918 the Administrative County, like the remainder of the country, was swept by two serious and fatal epidemics of Influenza. The first one, in July, accounted for over 400 deaths and there was also a large increase in the deaths from acute lung diseases. Some parts of the County suffered much more than others, one of the most striking examples being the Urban District of Hetton, where in June the total deaths only amounted to 11 and this figure was increased to 75 in July. During August and September the incidence of the disease appeared to subside but in the last week of October, 1918, another and much more fatal epidemic of Influenza produced the highest total death-rate I have known recorded in the Administrative County during any quarter, viz., 26.1 per 1,000 population, the rate from Influenza alone being 10.42, and, as in the July epidemic, there was also a greatly increased death-rate from acute lung diseases. The total deaths directly or indirectly due to Influenza during the last quarter of 1918 numbered 2,415, and the deaths from bronchitis and pneumonia totalled 1,134. The Local Government Board issued two Orders (The Public Health (Influenza) Regulations) in November, regarding certain preventive measures to be taken. The onset of the disease seemed to occur with tragic suddenness, in some cases death taking place in a very short time, and it was undoubtedly epidemic Influenza of a similar type to the 1889-91 outbreak. Its spread was probably facilitated by the lowered power of resistance of the community generally due to War conditions. Another feature of the epidemic was the high mortality among the young adult population of both sexes. Whole families were prostrated at the same time and were largely dependent for attention and food upon

District Nurses, immune neighbours, and the County Health Visitors, who laid aside all other duties and rendered invaluable help in combating the disease. The mortality was especially marked in overcrowded and badly ventilated areas, and gave emphasis to the extreme urgency of the remedying of the disgraceful housing conditions in many parts of the County, and also the need for the formation of Local District Nursing Associations throughout the County, affiliated to the County Nursing Association which was formed towards the end of 1918.

The preventive measures taken included the temporary appointment by local sanitary authorities of "Home Helps," but the number of women available was small, and many lives might have been saved had they had the requisite care and nursing; the closing of the whole of the elementary schools throughout the County; and the exclusion of children under 14 years of age from places of entertainment.

The following table gives the prevalence of notifiable infectious diseases and the mortality from the principal infectious diseases for the years 1916, 1917, 1918.

TABLE SHOWING THE NUMBER OF CASES OF INFECTIOUS DISEASES NOTIFIED IN
THE ADMINISTRATIVE COUNTY, 1909-1918.

	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.	Total of 10 years, 1909-18.
Small-pox	1	4	19	4	5,658	5,447	7,797	4,291	2,761	1,704	2,313
Scarlet Fever ...	3,737	3,419	3,253	5	1,252	1,406	1,653	1,698	1,377	1,049	40,380
Diphtheria	1,152	1,258	1,310	1	357	350	584	267	533	198	13,146
Enteric Fever ...	668	490	917	9	33	33	6	9	6	2	4,539
Continued Fever	24	19	...	...	...	...	...	...	...	...	113
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever ...	32	38	21	28	24	49	36	24	22	19	293
Puerperal Fever	722	651	638	596	711	763	603	481	329	328	5,822
Total.....	6,336	5,879	6,191	7,903	7,944	10,855	6,902	5,183	3,304	3,826	64,323
Attack Rate per 1,000 Living...	7.5	6.9	6.6	8.3	8.2	11.0	7.4	5.5	3.5	4.1	6.08

INFECTIOUS DISEASE (NOTIFICATION) ACT

Weekly Statement of notifiable diseases reported during 1916.

Week ended		Small-Pox	Scarlet Fever	Diphtheria	Fever				Ophthalmia Neonatorum	Erysipelas	Pulmonary Tuberculosis	Non-Pulmonary Tuberculosis				
					Enteric or Typhoid	Typhus	Relapsing	Continued								
January	8	...	63	40	7	...	...	...	2	10	21	26	
"	15	...	83	25	8	...	...	1	1	14	30	20		
"	22	...	98	36	8	...	...	...	5	15	41	17	
"	29	...	82	32	11	...	...	...	6	8	54	23	
February	5	...	92	46	6	...	...	...	3	20	42	28	
"	12	...	65	29	4	...	...	...	6	10	39	29	
"	19	...	77	38	1	...	...	...	4	5	24	15	
"	26	...	65	45	7	...	...	1	2	5	38	28		
March	4	...	63	29	...	...	...	1	1	15	38	15	
"	11	...	57	21	...	...	...	1	3	10	30	29	
"	18	1	67	24	5	...	...	1	4	13	39	32		
"	25	...	43	25	5	...	...	...	4	9	34	33	
April	1	...	68	37	4	...	...	1	3	9	40	28		
"	8	...	76	33	6	...	...	...	1	8	32	34	
"	15	...	61	38	2	...	...	...	3	15	59	44	
"	22	...	47	17	6	...	...	...	4	9	41	29	
"	29	..	55	22	3	...	...	1	1	17	32	29		
May	6	...	49	19	2	...	...	...	2	8	52	20	
"	13	...	43	27	6	...	...	...	2	9	43	39	
"	20	...	60	23	5	...	...	...	1	16	45	27	
"	27	...	59	18	2	...	...	...	1	11	52	39	
June	3	...	44	22	7	...	...	...	5	10	47	20	
"	10	...	46	14	...	...	...	1	...	5	32	26	
"	17	...	55	20	9	...	...	...	1	11	34	25	
"	24	...	47	12	11	...	...	...	1	13	26	28	
July	1	...	45	16	14	...	...	...	4	13	33	26	
"	8	...	36	20	5	...	...	...	1	7	32	28	
"	15	...	42	27	2	...	...	...	1	10	46	17	
"	22	...	37	23	12	...	...	...	4	4	32	19	
"	29	...	30	25	5	...	...	...	1	4	22	11	
August	5	...	36	20	4	...	...	...	1	3	30	11	
"	12	...	33	12	4	...	...	...	1	6	31	4	
"	19	...	41	19	3	...	...	1	1	8	23	10		
"	26	...	25	20	5	...	...	...	4	11	29	14	
September	2	...	67	27	10	...	...	...	3	8	26	5	
"	9	...	42	27	11	...	...	1	...	6	28	11		
"	16	...	52	30	3	...	...	1	3	6	30	14		
"	23	...	47	17	26	...	...	1	3	4	27	17		
"	30	...	58	35	99	...	...	1	1	6	31	21		
October	7	...	63	15	88	...	...	...	4	7	27	8	
"	14	...	58	27	29	...	...	...	...	6	32	16
"	21	...	43	21	24	...	...	...	1	11	22	12	
"	28	...	52	28	13	...	...	1	6	3	22	13		
November	4	...	65	29	9	...	...	...	1	8	28	20	
"	11	...	48	26	9	...	...	...	3	5	23	16	
"	18	...	47	37	10	...	...	...	1	11	33	20	
"	25	...	39	31	3	...	...	...	5	13	24	17	
December	2	...	41	38	3	...	...	...	5	7	36	8	
"	9	...	43	48	4	...	...	1	1	10	18	21		
"	16	...	36	23	2	...	...	1	...	15	24	17		
"	23	...	34	19	4	...	...	...	2	6	24	13	
"	30	...	35	25	7	...	...	...	1	6	18	8	
Total for the year		1	2761	1377	533	6	24	131	481	1716	1080			

INFECTIOUS DISEASE (NOTIFICATION) ACT

Weekly Statement of notifiable diseases reported during 1917.

Week ended	Small Pox.	Scarlet Fever.	Diphtheria.	Fever.								Erysipelas.	Pulmonary Tuberculosis.	Non-Pulmonary Tuberculosis.	
				Enteric or Typhoid.	Typhus.	Relapsing.	Continued.	Puerperal.	Ophthalmic Neonatorum,						
January 6	...	32	18	3	...	...	...	...	...	5	23	8		
13	...	28	26	1	...	...	...	1	1	6	23	20		
20	...	28	16	2	...	...	...	...	5	7	17	12		
27	...	34	20	2	...	...	...	...	1	9	27	14		
February 3	...	32	21	5	...	...	...	...	2	4	26	9		
10	...	32	17	3	...	...	...	1	3	7	27	19		
17	...	41	19	1	...	...	...	2	1	5	29	22		
24	...	25	27	2	...	...	...	1	2	9	29	16		
March 3	...	49	26	7	...	...	...	...	...	5	35	25		
10	...	27	24	...	...	...	1	...	1	10	22	25		
17	...	29	34	...	...	...	...	...	1	6	35	30		
24	...	42	31	3	...	...	...	...	1	6	42	22		
31	...	41	21	1	...	...	...	2	3	9	38	24		
April 7	...	27	17	...	...	...	...	...	2	7	28	19		
14	...	28	15	1	...	...	...	...	3	4	24	19		
21	...	27	14	2	...	...	...	...	3	7	30	16		
28	...	35	17	3	...	...	...	...	4	4	33	31		
May 5	...	38	7	2	...	...	...	...	5	7	51	25		
12	...	15	21	1	...	...	...	...	1	12	47	31		
19	...	22	15	5	...	...	...	...	4	10	36	34		
26	...	33	18	4	...	...	...	...	3	6	33	37		
June 2	...	20	13	3	...	...	...	...	3	2	26	16		
9	...	21	18	3	...	...	1	...	4	4	36	17		
16	...	27	13	1	...	...	...	...	4	4	47	19		
23	...	19	18	2	...	...	...	...	2	7	32	20		
30	...	18	29	3	...	...	...	...	1	7	32	46		
July 7	...	20	18	1	...	...	...	...	3	5	36	14		
14	...	28	23	1	...	...	...	...	3	7	29	13		
21	...	20	23	2	...	...	...	2	7	7	32	21		
28	...	16	16	6	...	...	...	...	2	4	34	16		
August 4	...	22	17	2	...	...	...	...	5	3	43	15		
11	...	7	15	4	...	...	...	...	2	2	23	11		
18	...	24	17	5	...	...	...	1	1	4	24	13		
25	...	23	14	7	...	...	...	...	1	5	29	13		
September 1	...	27	18	4	...	...	...	1	1	5	23	18		
8	...	36	22	7	...	...	...	...	1	6	22	13		
15	...	31	24	5	...	...	...	1	2	4	18	8		
22	...	29	15	9	...	...	...	1	4	5	26	18		
29	...	28	18	8	...	...	1	3	9	18	9			
October 6	...	33	29	5	...	...	...	...	1	1	4	22	15	
13	...	40	18	15	...	...	...	...	5	8	16	11		
20	...	33	27	9	...	...	...	...	4	4	18	9		
27	...	36	20	7	...	...	...	1	6	2	22	11		
November 3	...	57	17	7	...	...	...	...	1	8	23	17		
10	...	40	17	8	...	...	...	1	5	10	27	18		
17	...	63	24	3	...	...	...	1	3	11	13	10		
24	...	57	33	3	...	...	...	1	4	10	25	15		
December 1	...	51	21	7	...	...	...	2	5	3	19	16		
8	...	59	33	3	...	...	...	...	1	6	19	8		
15	...	45	23	5	...	...	...	...	3	14	19	17		
22	...	62	16	3	...	...	...	...	8	8	23	11		
29	...	47	16	2	...	...	...	2	6	13	7			
Total for the year	...	1704	1049	198	2	22	126	329	1444	923			

INFECTIOUS DISEASE (NOTIFICATION) ACT

Weekly Statement of notifiable diseases reported during 1918.

Week ended	Small Pox.	Scarlet Fever.	Diphtheria.	Fever.				Puerperal.	Ophthalmia Neonatorum.	Erysipelas.	Pulmonary Tuberculosis.	Non-Pulmonary Tuberculosis.
				Enteric or Typhoid.	Typhus.	Relapsing.	Continued.					
January 5	50	23	1						1	7	18	4
” 12	60	19	4						1	9	17	20
” 19	59	26	3						5	9	17	13
” 26	66	25	7						3	8	26	16
February 2	79	40	...						4	11	19	26
” 9	87	34	5						1	6	35	26
” 16	70	36	6						2	9	21	25
” 23	55	27	1						3	14	28	27
March 2	64	46	4						1	12	35	20
” 9	63	30	...						3	10	31	22
” 16	46	27	1						1	11	36	23
” 23	61	27	2						2	8	49	21
” 30	40	21	3						3	7	24	18
April 6	38	22	3						2	7	20	14
” 13	36	19	2						1	4	32	26
” 20	33	23	3						...	9	35	17
” 27	57	16	1						3	8	33	23
May 4	32	12	...						2	4	25	29
” 11	42	17	1						3	3	27	16
” 18	51	23	4						4	9	26	16
” 25	37	21	1						...	8	41	25
June 1	19	15	1						5	6	54	19
” 8	37	20	...						4	5	29	13
” 15	21	14	...						2	6	24	25
” 22	29	18	4						4	3	28	34
” 29	22	14	4						3	7	27	32
July 6	9	13	2						1	1	19	9
” 13	15	10	1						5	3	32	13
” 20	19	9	...						4	4	24	13
” 27	25	13	1						2	6	18	4
August 3	22	13	4						3	1	30	13
” 10	13	10	1						4	3	29	6
” 17	29	15	4						3	...	35	9
” 24	25	22	8						1	1	19	10
” 31	36	13	4						2	5	14	12
September 7	44	19	13						1	6	22	10
” 14	33	19	8						...	2	20	13
” 21	41	12	11						3	6	22	10
” 28	62	15	12						5	5	6	7
October 5	70	18	9						3	10	16	16
” 12	48	16	6						3	7	18	14
” 19	52	15	4						2	3	17	12
” 26	71	14	1						4	12	24	6
November 2	79	18	...						1	7	26	13
” 9	74	16	6						5	9	17	15
” 16	45	21	3						4	8	12	6
” 23	36	12	8						...	6	5	2
” 30	51	16	...						1	5	9	7
December 7	44	9	4						2	4	22	9
” 14	40	13	3						3	4	9	7
” 21	38	14	1						3	2	23	8
” 28	38	11	...						3	5	11	7
Total for the year	2313	991	175	...	...	...	19	131	328	1267	803	

TABLE GIVING FOR EACH YEAR THE NUMBER OF DEATHS AND THE DEATH-RATE
 FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES DURING THE TEN YEARS,
 1909 to 1918.

	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	Mean of 10 years.
Estimated Population ...	898,840	916,150	933,780	951,750	970,070	985,292	940,190	926,986	926,986	926,986	937,703
Small-pox .....	...	...	...	1	...	...	...	...	...	...	...
Scarlet Fever ...	80	70	74	99	148	214	102	62	33	71	101
Diphtheria	149	150	155	157	184	228	270	192	170	140	194
Enteric and Continued Fever	107	85	159	63	67	110	51	79	29	40	95
Measles.....	324	176	417	496	398	164	1009	55	364	210	385
Whooping Cough	217	224	365	259	177	359	216	222	155	312	296
Diarrhoea	506	702	1547	257	834	1110	596	328	466	420	798
Total	1383	1407	2717	1332	1808	2185	2244	938	1217	1193	1,869
Rate per 1,000 Living	1.53	2.90	1.39	1.86	2.21	2.38	1.01	1.31	1.28	1.99	

BACTERIOLOGICAL EXAMINATIONS.

The following table gives for each year the number of specimens examined from 1915—1918, and it will be noted that there is a considerable decrease during the last three years in respect of all the diseases dealt with:—

	Number of Specimens submitted.				Results in 1916.			Results in 1917.			Results in 1918.		
	1915	1916	1917	1918	Positive.	Negative.	Inconclusive.	Positive.	Negative.	Inconclusive.	Positive.	Negative.	Inconclusive.
Diphtheria	802	541	546	348	200	306	34	104	393	48	84	206	56
Enteric Fever	209	202	152	101	118	82	2	64	86	2	30	60	11
Tuberculosis (Phthisis, etc.)	1163	832	861	648	275	557	...	187	674	...	168	479	...
Totals	2174	1575	1559	1097	593	945	36	355	1153	50	282	745	67
Positive Cases (proportion per cent.)	33.4	35.6	22.7	25.4	..	..	...	...	...	...	...	...	...

ISOLATION HOSPITALS.

The accommodation for the institutional treatment of Smallpox and the ordinary infective diseases is satisfactory, except that for the Hartlepool Area. The Seaham Harbour Urban District Council have agreed to carry out alterations to the present Smallpox Hospital so as to provide for six cases of the same sex. An arrangement was also come to in 1918 whereby Smallpox patients from the area of the Stanhope and Weardale Hospital Committee will be treated in the Auckland, Etc., Joint Hospital Board's Smallpox Hospital, the County motor ambulance being loaned for the conveyance of such patients to hospital, and the cost (including the charge for disinfection of the motor ambulance at the Smallpox Hospital) being borne by the Stanhope and Weardale District Committee.

PREVENTION OF TUBERCULOSIS.

The total number of deaths from Tuberculosis in 1916 numbered 1,328, in 1917 1,382, and in 1918 1,358, as compared with 1,351 in 1915. The deaths from Pulmonary Tuberculosis were 887 in 1916, 929 in 1917, and 1,005 in 1918, while those from other forms of Tuberculosis were 441 in 1916, 453 in 1917, and 353 in 1918.

The following table gives the death-rate from Phthisis in the Boroughs and in the Urban and Rural Districts in the County:—

Rate per 1,000 Living.	1915.	1916.	1917.	1918.
Boroughs	1.45	1.42	1.42	1.66
Other Urban Districts...	0.92	0.67	0.75	0.79
Rural Districts.....	0.81	0.83	0.84	0.90
Administrative County...	0.94	0.95	1.00	1.08
England and Wales...	1.16	1.17	1.25	1.34

During the year 1916, 2,876 cases of Tuberculosis were notified, 1,691 being pulmonary and 1,185 non-pulmonary. In 1917, 2,268 cases were notified, 1,378 being pulmonary and 890 non-

pulmonary, whilst in 1918, 1,934 cases were notified, 1,176 being pulmonary and 758 non-pulmonary. The number of notifications on Form "B" were very few, and this was undoubtedly due to the depletion of the School Medical Staff both in the Administrative County and autonomous areas.

Under the County Tuberculosis Scheme 2,607 applications for Sanatorium treatment were received in 1916, 2,620 in 1917, and 2,400 in 1918.

Treatment was granted as follows:—

	Sanatorium.	Hospital.	Domi- ciliary.	Dis- pensary.	Awaiting completion Med. Repts.	No treat- ment.	Deaths.
1916	974	77	23	1,014	312	154	53
1917	922	144	25	980	335	182	32
1918	792	144	39	930	302	110	53

and the results of the Institutional Treatment as follows:—

Year.	Fit for work or school.	Im- proved.	Station- ary.	Worse.	Left at own request.	Died.	Total.
1916	319	609	176	62	39	26	1,231
1917	340	512	237	52	—	36	1,177
1918	242	683	173	73	45	27	1,243
Total	901	1,804	586	187	84	89	3,651

SUPERVISION OF TUBERCULOUS PATIENTS. The County Health Visitors as before devoted half their time to Tuberculosis and School Work during 1916, 1917 and 1918, and in the first year under review paid 24,695 visits to the homes of Tuberculous patients as against 20,354 visits paid in 1915. In 1917 the visits paid numbered 20,980 and in 1918 rose to 22,039. In addition the Health Visitors in 1916 made 826 attendances at Tuberculosis Dispensaries, in 1917 they made 939, and in 1918, 876, where, as stated in previous reports, they assist with the weighing of patients, dressing of surgical cases and keeping of records, etc.

Despite the extreme shortage of staff, both medical and clerical, the County Scheme was kept in full operation during the period

under review, though the extension of accommodation at the various sanatoria in the County imposed additional duties on the staff.

In 1916 the whole of the arrangements for administering Sanatorium Benefit throughout the Administrative County were transferred to the County Council from the County Insurance Committee.

The new pavilion at the County Sanatorium at Wolsingham, containing accommodation for 40 beds, was opened in April, 1916, for the patients. By the provision of shelters and other temporary accommodation, the total number of beds available at the County Sanatorium was increased to 94, made up as follows:—

New Pavilion	40 beds.
Permanent Shelters	24 beds.
In the Hall (children)	30 beds.
<hr/>	
Total.....	94 beds.

Arrangements were made for the education of the children patients in the County Sanatorium, and a whole-time lady school mistress was appointed, a suggested curriculum being first submitted to and approved by the Board of Education.

The Sanatorium has also been fitted out with electric lighting.

In the Administrative County the following beds were available at the end of 1918 for the residential accommodation of phthisical patients:—

County Sanatorium, Wolsingham	94
Chester-le-Street (Blackfell Tuberculosis Hospital).....	38
Sunderland (Tuberculosis Hospital)	14
Hebburn (Tuberculosis Hospital)	24
Ryton (Sealburn Tuberculosis Hospital)	22
Lanchester (Maiden Law Tuberculosis Hospital)	42
Felix House, Dinsdale (daily average number)	25
Children's Sanatorium, Stannington do.	40
Tindale Crescent, Bishop Auckland	12
Helmington Row, Crook	14
<hr/>	
Total	325

The new Tuberculosis Dispensary situated at No. 1, Ropery Lane, Chester-le-Street, was opened during the first week of January, 1916, and has considerably relieved the congestion in the central district of the County.

Much difficulty was experienced during the time of the food shortage and rationing schemes which necessitated the frequent readjustment of the dietary scales in the various institutions under the control of the County Council.

Throughout the three years 1916, 1917, and 1918 the arrangements made between the County Council and various general hospitals in the Administrative County regarding the surgical treatment of Tuberculosis were continued, the weekly amount charged per patient being adjusted to meet the increased cost of living, etc.

Under the arrangements made between the County Council and the College of Medicine, Newcastle, the latter undertakes the bacteriological examination of sputum, etc., from patients residing in the Administrative County, and, as stated elsewhere, the number of specimens from Tuberculous patients in 1916 amounted to 832 as compared with 1,163 in 1915, while in 1917 the figure was 861, and in 1918, 648.

The arrangements providing for County patients being treated at the Sunderland Dispensary by the Sunderland Tuberculosis Medical Officer were also continued.

The provision of bacteriologically "clean milk" is inevitably bound up in the prevention of Tuberculosis and during the years under review two cases of milk containing tubercle bacilli were brought to my notice, and in each case the affected cow was isolated and eventually slaughtered.

During 1916, 1917, and 1918 the question of the treatment of Discharged Tuberculous soldiers became increasingly urgent, and under regulations issued by the Local Government Board the County Council was required to give priority of admission wherever possible in the Sanatoria controlled by them so as to relieve the demand on beds in Military Hospitals.

After prolonged negotiations and with the approval of the Local Government Board the County Council took over, on the 1st October, 1917, the full control of the Black Fell Sanatorium in the Chester-le-Street Rural District, which had accommodation for 26 patients, and after a brief closure for refitting, was re-opened with accommodation for 38 patients.

I would again reiterate my firm conviction that until the housing conditions of the majority of the people in the County are very greatly improved, a large proportion of the expense of providing institutional treatment for Tuberculous patients cannot be utilized to the best advantage. For example, among the Districts in the County having high Tuberculosis death-rates are Jarrow U.D., Felling U.D., and South Shields R.D., where the available housing accommodation is very overcrowded.

In accordance with the County Scheme, and with the approval of the Local Government Board, the Dental treatment considered necessary to facilitate the recovery of the patient from Tuberculosis was provided free in several instances.

Towards the end of 1918 the important Memorandum 233a. I.C. was received from the Insurance Commissioners setting forth the provisions for the treatment of invalidated or discharged soldiers or sailors and others engaged in Military service. Briefly the scheme among other things provided (1) that all accommodation available for treatment of Tuberculous persons should be available in priority to ex-service men and women, (2) that payments by the Insurance Commissioners should be made weekly provided that the cost of treatment is reasonable, the first cost of treatment being defrayed from the special fund, the General Sanatorium Benefit Fund (up to "case values"), subsequent treatment over and above this amount being paid out of the State Funds, (3) that the Insurance Commissioners have the right to request the Tuberculosis Medical Officer to furnish them with reports on particular cases, (4) that institutional treatment be provided immediately a case is recommended for such by the Military Authorities, Pensions Medical Board and Insurance Commissioners, and also for advanced cases "in need of medical supervision and such nursing and palliative treatment as is afforded in a residential Institution" though the Insurance Commissioners reserve the right to terminate their liability for cost of treatment after a certain date, (5) for the

employment by the Ministry of Pensions of Tuberculosis Officers as Medical Referees wherein they will be required to examine discharged soldiers appealing against the Pensions Assessment, etc., (6) for visiting by the Health Visitor at the homes of discharged Tuberculous soldiers with a view to the Health Visitor reporting in writing to the Tuberculosis Medical Officer on the sanitary condition of the home, sleeping accommodation, and general arrangements for receipt of patient both before and after leaving the sanatorium and subsequently at regular intervals, and the Ministry of Pensions expressed themselves as willing to pay for such services rendered by the Health Visitor, (7) that extra diet to discharged Tuberculous soldiers and sailors may be paid for by the War Pensions Committee after consulting with the Tuberculosis Medical Officer, (8) as to employment and training of discharged Tuberculous soldiers and sailors discharged from Sanatoria and as to action regarding men suffering from Tuberculosis, discharged from Military Hospitals who have refused residential or other treatment, (9) for the Pensions Committee, on the recommendation of the Tuberculosis Medical Officer, to pay for the removal of patient and his family to a more sanitary locality, (10) for the making by the Tuberculosis Medical Officer to the Local Government Board of a special report, on this branch of work with a detailed statement as to the number of visits paid by the Health Visitors to discharged Tuberculous soldiers and sailors.

These provisions (together with many others not mentioned) contained in the Memo. 233a. I.C. have naturally thrown a tremendous amount of work on the Tuberculosis Department, already greatly increased since the commencement of the war, and a very great strain on the remaining Medical Staff.

With regard to the visiting and reporting by the Health Visitor as to the home conditions of discharged Tuberculosis service men, I may mention that for the year 1918, 18,000 reports on Tuberculous patients from the Health Visitors were received by the Tuberculosis Medical Officer.

MATERNITY AND CHILD WELFARE.

During 1916, 18,005 notifications were received by the County Medical Officer from the area in which the Act is administered by the County Council (i.e., the whole Administrative County less Hartlepool, Jarrow, Stockton, and Whickham Urban Districts), and were equal to 90.9% of the registered births.

In 1917, 16,410 notifications were received, equal to 90.8% of the registered births, and in 1918, 17,514 notifications received equalled 89.6% of the births registered.

While a small proportion of births unnotified during these years were due to forgetfulness on the part of the medical practitioners and certified midwives, a considerable number were undoubtedly due to uncertified midwifery practice. Probably the scarcity of doctors and qualified midwives accounted for the employment of these "handywomen." It was most unfortunate that the Health Visitor Staff was so small as to render it impossible to adequately supervise all births occurring in addition to their many other duties of visiting cases of Tuberculosis, mentally defectives, verminous and dirty school children, etc. Moreover large numbers of married women with families went out to work, being tempted by the high wages offered and the difficulty of making both ends meet on the separation allowance, and many children were left without proper attention or in the care of kindly neighbours. Letters were sent to several medical practitioners in the County who failed to comply with the provisions of the Notification of Births Act.

The average number of Health Visitors on the staff in 1916 was 27, in 1917 it was 31 and in 1918, 38.

Near the end of 1917 the County Council, under the powers contained in the Notification of Births Extension Act, 1915, gave authority to the County Health Committee to prepare a scheme for dealing with this important question, and a County Maternity and Child Welfare Committee was subsequently set up. One of the first steps taken was the formation of a County Nursing Association, and another, the adequate provision of trained midwives throughout the County.

With regard to the County Nursing Association, to which many local District Nursing Associations are affiliated, and the need for which was so clearly demonstrated during the Influenza epidemic in 1918, its formation was rapidly proceeded with. The County Council then obtained sanction to provide not more than one-half of the cost of establishing and maintaining District Nursing Associations providing midwifery and working under certain conditions laid down by the County Nursing Association, and also powers to contribute towards expenses of existing District Nursing Associations providing midwifery, if they were unable to provide this service without assistance, and also the fees of medical practitioners called in by midwives so employed. In several districts medical practitioners were opposed to the provision of a trained midwife, but I believe that the objections of these practitioners have now, after practical experience of the work of a trained midwife, disappeared. The whole question of a provision of a County Trained Midwifery Scheme was the subject of a special report by me to the County Midwives Committee, dated 12th July, 1917.

At the beginning of 1918, there were 16 Child Welfare Centres in existence in the County, of which only two were Municipal Centres, the remainder being run by voluntary workers. The County Maternity and Child Welfare Committee continued to develop its scheme of forming additional Centres which were urgently needed in some of the most thickly populated urban districts. Many difficulties were experienced, especially as regards the obtaining of suitable premises. On the 1st September, 1918, the County Maternity and Child Welfare Committee appointed Dr. Elspet Bursey whole-time Lady Welfare Medical Officer, and her work up to the end of the year was chiefly devoted to (1) attending the sessions at the existing Child Welfare Centres, (2) inspecting premises, etc., likely to be used for new Child Welfare Centres, (3) organising the administrative work of the scheme. At the end of 1918, 15 Child Welfare Centres were in operation throughout the County, the total number of children on the books being 1,745, with attendances of 2,410 and 1,198 consultations. The Welfare Medical Officer, in her report for the quarter ended 30th September, 1918, says:—“Only a doctor “with his or her medical training can examine the expectant

"mothers and children, and although the Health Visitor or Voluntary "Worker may give good advice it is necessarily limited and not "comprehensive. Therefore I would point out that 'Babies Wel- "comes' held without a doctor in attendance are practically worth- "less so far as the serious scientific tackling of the infant mortality "problem is concerned."

Speaking of the urgent need of accurate history cards for each baby being carefully carried out, the Welfare Medical Officer, in the same report, states:—"More room on the cards is also necessary for noting progress at each visit so that we may be able "to study thoroughly each case. No perfunctory glance and note will suffice to throw light on this important subject wherein there is so much field for research. Continued observation from "week to week must be made, especially in the case of children "under one year, and it is impossible to investigate the causes of "ailing and wasting in delicate infants without this. Defaulting "cases must be sought out by the Health Visitors and urged to "attend the Centre regularly so that we may not lose our super- "vision of them."

To meet a serious deficiency in the quantity and quality of the milk available for young children, the sale of Dried Milk was commenced at 13 of the Child Welfare Centres, and the milk was also supplied free or below cost price to necessitous mothers.

1916. In 1916 lectures were given in various parts of the County, and to female prisoners in H.M. Prison, Durham, upon health matters.

On the advice of the School Medical Officer, proceedings under Section 12 of the Children Act, 1908, were taken in 36 cases against parents who had neglected the cleanliness of their children. The Health Visitors gave evidence and a conviction was obtained in every case.

Scabies was prevalent during the year, 1,900 cases among school children coming under the observation of the Health Visitors. Of these children 1,394 were reported cured at the end of

the year. It was calculated that for every school child suffering from the disease at least 4 other members of the family were also affected, which gives a total of nearly 10,000 persons suffering from this disease in the County.

As will be observed in the Infectious Diseases paragraph, two of the Health Visitors who were trained nurses were detached for special duty in connection with an outbreak of Enteric Fever at Boldon Colliery.

In June, the first Annual Conference on Maternity and Child Welfare organised by the County Health Department for voluntary workers was held at the Shire Hall, Durham, and a paper was read by the Deputy County Medical Officer, Dr. A. G. R. Cameron.

1917 In 1917 and during National Baby Week, demonstrations, exhibitions, and meetings were held in many places, the Health Visitors assisting in every way possible.

The Health Visitors reported a shortage of milk in some areas.

One of the Health Visitors was detailed for special duties in connection with an outbreak of Scarlet Fever at Hetton.

2,052 cases of scabies were reported by the Health Visitors among school children, and 1,059 of these were reported cured by the end of the year.

The second Annual Conference on Maternity and Child Welfare organised by the County Health Department was held in the Town Hall, Durham, the Mayor of Durham presiding. The programme included an address by Dr. Scurfield, of Sheffield, a lantern lecture by Dr. T. C. Penfold, of Bishop Auckland, and an exhibition by various Welfare Centres.

1918 During 1918, the Health Visitors undertook, in addition to their many other duties, the home supervision of motherless and orphan children of soldiers and sailors.

The number of school children found to be suffering from scabies was 1,943, of which 1,424 were reported cured at the end of the year. Proceedings under Section 12 of the Children Act, 1908, were instituted in several cases.

The third annual conference organised by the Health Visitors for voluntary workers extended its scope, the five County Boroughs (i.e., Darlington, Gateshead, South Shields, Sunderland, West Hartlepool) being invited to join in. The first joint conference was held at Sunderland in June, Sir A. Newsholme and Dr. Truby King being the principal speakers.

During National Baby Week of 1918 a special Baby Week programme was printed and circulated throughout the County containing articles dealing with Child Welfare. Sermons were preached and lessons given at schools.

A travelling County Child Welfare Exhibition was established and proved extremely popular, visiting 16 towns and villages.

In May, the Milk (Necessitous Mothers and Children) Order was brought into operation, the work being undertaken by the County Health Visitors. As stated above, the Health Visitors had reported that there was a serious deficiency both in the quantity and quality of the fresh milk available for young children. To meet this difficulty dried milk was sold at cost price at 12 out of the 13 Child Welfare Centres in operation. In certain centres where the County Council was unable to start Child Welfare Centres, Dried Milk Stations were established in September, and the milk stored on the premises of respectable householders who undertook to sell it one half-day weekly to persons bringing an order signed by a Health Visitor.

As stated in the paragraph on "Infectious Diseases," the whole of the County Health Visitor Staff laid aside all other duties and wholeheartedly entered the struggle against Influenza, working night and day in their efforts to save lives, earning and receiving the grateful thanks of their many patients and the public generally.

Statements showing the amount of work done by the Health Visitors for each of the three years under review are given below:—

SUMMARY OF WORK DONE BY THE HEALTH VISITORS
FOR THE YEAR 1916.

BIRTHS :—

1st Visits	17,384
Re-Visits	21,685
	— 39,069

SCHOOL CHILDREN

SCHOOLS

	21,432
	2,771
	— 24,203

TUBERCULOSIS :—

1st Visits	2,877
Re-Visits	21,818
	— 24,695

OTHER VISITS

REPORTED TO MEDICAL OFFICER OF HEALTH :—

Overcrowding	382
Sanitary Defects	578
	— 960

TOTAL NUMBER OF VISITS (not including attendances
at Dispensaries, Child Welfare Centres or
Ineffective Visits)

89,682

ATTENDANCES AT DISPENSARIES

826

,, , CHILD WELFARE CENTRES

207

INEFFECTIVE VISITS

5,645

INSURANCE MEETINGS

4

SUMMARY OF WORK DONE BY THE HEALTH VISITORS
FOR THE YEAR 1917.

BIRTHS:—

1st Visits	18,114
Re-Visits	31,662
	— 49,776

SCHOOL CHILDREN 17,388

SCHOOLS 1,969
— 19,357

TUBERCULOSIS:—

1st Visits	2,984
Re-Visits	17,996
	— 20,980

OTHER VISITS 2,226

REPORTED TO MEDICAL OFFICER OF HEALTH:—

Overcrowding	457
Sanitary Defects	635
	— 1,092

TOTAL NUMBER OF VISITS (not including attendances
at Dispensaries, Child Welfare Centres or
Ineffective Visits) 92,339

ATTENDANCES AT DISPENSARIES 939

„ „ CHILD WELFARE CENTRES 435

INEFFECTIVE VISITS 6,385

INTERVIEWS WITH M.O.H. 281

SUMMARY OF WORK DONE BY THE HEALTH VISITORS
FOR THE YEAR 1918.

BIRTHS :—

1st Visits	18,294
Re-Visits	33,325
	— 51,619

SCHOOL CHILDREN	20,628
SCHOOLS	2,614
	— 23,242

TUBERCULOSIS :—

1st Visits	2,974
Re-Visits	19,065
	— 22,039

OTHER VISITS	8,214
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REPORTED TO MEDICAL OFFICER OF HEALTH :—

Overcrowding	533
Sanitary Defects	713
	— 1,246

TOTAL NUMBER OF VISITS (not including attendances at Dispensaries, Child Welfare Centres or Ineffective Visits)	105,114
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ATTENDANCES AT DISPENSARIES	876
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„ „ CHILD WELFARE CENTRES	755
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INEFFECTIVE VISITS	7,130
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WATER SUPPLY.

The water supply of the County during the three years under review was unchanged to any great extent, and there was practically no development.

At the beginning of 1916, and at the request of the Houghton Rural District Council, I inspected the water supply at the Hospital belonging to the Hetton Urban District Council, and several small cottages in the vicinity, at East Rainton, and advised them that there was serious risk of pollution to the present supply. The Rural District Council communicated my report to the Hetton Urban District Council who replied that in view of the present high cost of laying new supply pipes from the mains of the Weardale and Consett Water Company to the Hospital, etc., it had been decided to leave the question over for the time being.

The outbreak of Enteric Fever at Ferryhill Station (mentioned in the paragraph on Infectious Diseases) gave rise to strong suspicions of the pollution of an open service reservoir near Ferryhill Station, in the Sedgefield Rural District, by excretal matter from a tip in the vicinity, on which midden privy refuse was deposited.

During the early part of the year 1917, complaints were received that the water supply to a part of Burnhope, in the Lan- chester Rural District, was inadequate, and was the subject of an interview which the representatives of the District Council and I had with the officials of the Weardale and Consett Water Company. The Companys officials promised to do their best to maintain a reasonable supply but with the existing supply there is difficulty in getting sufficient pressure.

In some parts of the County supplied by the Weardale and Consett Water Company, during the early part of 1918, many complaints were made regarding the lack of water for domestic purposes, largely owing to leaking mains, in the repair of which there was often considerable delay owing to the depletion of the staff of the Company on account of the war.

Complaint was also made of the inadequacy of the supply of domestic water at Fishburn, a rapidly growing village in the Sedge-

field Rural District, which on enquiry was found to be due to the smallness of the pipe carrying the supply from the Weardale and Consett Water Company's mains to the village. An improvement was afterwards effected and a more adequate supply of water obtained.

DRAINAGE, SEWERAGE, AND SEWAGE DISPOSAL.

During the past three years the construction of new sewage purification works has been practically at a stand-still and, so far as I can learn, little or nothing has been done towards the preparation of plans in anticipation of the cessation of hostilities.

Owing to the shortage of money, labour and materials, due to the War, and to the pressure of output and intensive productions of bye-products giving rise to considerably increased volumes of waste liquors to be dealt with in tanks, ponds, etc., already often totally inadequate, gross pollution of the streams in this County has been continually recurring and our attention has been directed towards securing the best possible conditions under the circumstances.

Owing to pollutions, accidental and otherwise, large numbers of fish have been destroyed in both the rivers Tees and Wear, and the need for stand-by tanks or other efficient means for dealing with accidental losses of valuable bye-products, with advantage to all concerned, has been sufficiently demonstrated, as has also the need for dealing with the waste liquors from bye-product and chemical works on a more rational and scientific basis.

It has been felt for many years that the powers of the County Council for dealing with these and other pollutions met with throughout the County are altogether inadequate and representations have frequently been made to the Local Government Board on the matter, and it is hoped that without unnecessary delay the matter will receive the attention which it deserves and thus give effect to the findings of the Royal Commission on Sewage Disposal, etc., whose final report was issued in the early part of 1915.

DISPOSAL AND REMOVAL OF EXCREMENT AND HOUSE REFUSE.

Only a comparatively small amount of new work under this heading was carried out in the course of the years 1916, 1917, and 1918. The local sanitary authorities in many cases not only found it impossible to proceed with the work of converting privies into water-closets, but experienced extraordinary difficulty in getting the ordinary scavenging work of the district performed. Despite all this, however, some work of converting closets into water-closets was proceeded with, notably in Blaydon (67) and Stanley (76) Urban Districts and in the Darlington (41) and Easington (50) Rural Districts. Most of this work, however was carried out in 1916, little actual improvement being effected in 1917 and 1918.

With such an extreme shortage of labour the scavenging work throughout the County, almost without exception, was very indifferently performed, and numerous complaints were received especially in the warm weather. Enquiries were made into every complaint and an effort to remedy the nuisance in nearly all cases was made so far as was humanly possible. In one area in the Easington Rural District the work was so unsatisfactorily performed by the contractor that the Rural District Council themselves undertook the work, providing the horses and carts and employing their own workmen with satisfactory results. Now that the war is over, it is to be hoped that all the sanitary authorities in the County will, so far as possible, proceed with the important work of replacing the foul and insanitary privy system by water-closets.

The practice of depositing offensive privy and ashpit refuse in unsuitable positions, and often in the vicinity of dwellings, is still far too common and is often a serious nuisance and a danger to the public health. If such tips are required every care should be taken that they are so situated as not to be a danger or annoyance.

Complaints were received of an objectionable nightsoil tip near Marsden Colliery, in the South Shields Rural District, and after several communications with the District Council an improvement was effected.

In 1916, a refuse tip close to the County Elementary Schools near Marley Hill, in the Whickham Urban District, was suspected to be the cause of an outbreak of Diphtheria there, and the District Urban Council were strongly recommended to stop using the tip, which has since been abandoned.

In 1917 the attention of the Auckland Rural District Council was drawn to refuse tips situated near Helmington Row Council School and to another in a clay pit near Close House. A tip belonging to the Bishop Auckland Urban District at Fylands Bridge was also the subject of a complaint, and undoubtedly at times caused a serious nuisance. The use of a refuse tip in the Weardale Rural District at Wolsingham, situated in a position likely to contaminate the River Wear, was discontinued after the receipt by the District Council of a letter from the Local Government Board.

The inclusion of the usual table given under this heading, showing the number and various types of closets in the Administrative County, is not possible for the three years under review, owing to the incomplete information available.

HOUSING.

As was the case during the year 1915, very little work under this heading was done during 1916, 1917, and 1918, and an increasing number of housing schemes were held up pending the finish of hostilities.

In a large number of Districts in the County it was found impossible to systematically carry out routine inspections under the Housing (Inspection of District) Regulations, but in most districts attention was given to any sanitary defects reported and, so far as labour and materials permitted, these were remedied.

In several districts where large munition factories had sprung up the housing conditions were bad, overcrowding of a gross character being very common. The health of the workers undoubtedly suffered through living under these conditions, but very little could be done owing to the lack of proper accommodation.

District medical officers of health are almost unanimous in pressing for more and better houses immediately the economic conditions permit.

It has been found impossible with the small amount of accurate information to give the usual table showing the number of houses erected and to include a statement of work done under the Housing (Inspection of District) Regulations, but practically the erection of new dwelling houses was at a standstill during the three years under review, as was also systematic action for dealing with insanitary property.

STREETS.

There is practically nothing to report under this heading during the years 1916, 1917, and 1918. Many streets, both front and back, in a large number of sanitary districts in the Administrative County urgently need to be properly made up, and this work, so important to the comfort and health of the people, should receive the urgent attention of the district sanitary authorities.

DAIRIES, COWSHEDS AND MILKSHOPS.

Improvements in connection with the above were at a standstill during the years under review but a great deal of work remains to be done to remedy the conditions under which milk is produced and retailed to consumers. With the war ended, immediate action should be taken by local authorities to enforce existing bye-laws regarding structural requirements, cubic space and ventilation, etc.

The important provisions contained in the Milk and Dairies (Consolidation) Act, 1915, which throws considerable duties on to County Medical Officers, and the chief points of which I summarised in my last annual report, does not come into operation until a year after the official termination of War.

FOOD AND DRUGS ACT.

The administration of the above Act in the Administrative County (less Hartlepool and Durham) is delegated to the Chief Inspector of Weights and Measures, who reports direct to the Executive Committee of the County Council and not to the County Health Committee.

In the case of Hartlepool and Durham, samples are taken and dealt with by local officials, and in Stockton and Jarrow the samples, by arrangements made with the County Council, are taken by local officials who submit them to the County Analyst.

In the Administrative County the total number of samples examined each quarter in 1916, 1917 and 1918 by the County Analyst, and the results, are here given:—

1916.

	Samples Examined.	Not Genuine or below Standard.	Proportion per cent.
1st Quarter	231	23	9.95
2nd Quarter	221	17	7.69
3rd Quarter	212	16	7.54
4th Quarter	245	34	13.87

1917.

1st Quarter	254	26	10.23
2nd Quarter	213	16	7.51
3rd Quarter	203	11	5.41
4th Quarter	250	26	10.40

1918.

1st Quarter	242	11	4.54
2nd Quarter	237	33	13.92
3rd Quarter	197	18	9.13
4th Quarter	211	30	14.21

The purity and wholesomeness of our milk supply is of the greatest importance and I give in the following table the number of samples of milk examined each year with the number and percentage of samples not genuine or below standard. It will be noted that there was a considerable increase during 1918 in the percentage of samples adulterated or of poor quality:—

	Samples submitted.	Found not genuine.	Percentage below standard.
1916	256	81	31.6
1917	215	59	27.4
1918	298	121	40.6

MIDWIVES ACTS.

The administration of the above Acts is in the hands of the County Midwives Committee. There is a County Midwives Inspector who not only supervises the midwives generally but enquires into all cases of sending for medical help, Puerperal Fever, Ophthalmia, etc., in the practice of midwives, and assists in investigating cases of uncertified midwifery practice.

The number of certified midwives living in the Administrative County at the end of 1916 was 240, at the end of 1917, 236, and at the end of 1918, 219. The number of midwives in the County who had passed the examination of the Central Midwives Board on the 31st March, 1919, was 125.

The number of cases of Puerperal Fever in the practice of certified midwives during the three years 1916, 1917, and 1918, were as follows:—

1916	4 cases.
1917	0 ,,
1918	3 ,,

The usual practice of immediate enquiries into each case was carried out, and the essential preventive measures taken.

The number of still-births reported in 1916 was 86, in 1917, 103, and in 1918, 126.

The deaths of 6 mothers and 63 children occurring in certified midwives practice were distributed as follows:—

	Deaths of Mothers.		Deaths of Infants.
1916	3	...	28
1917	2	...	15
1918	1	...	20

The following statement shows the number of certified midwives (a) reported to the Central Midwives Board, (b) warned by the Local Supervising Authority:—

	(a)	(b)
	Reported to Central Midwives Board.	Warned by Local Supervising Authority.
1916	1 ...	11
1917	3 ...	15
1918	1 ...	19

During the three years under review 274 visits were paid to 270 uncertified women acting as midwives, other than in cases of emergency, and they were warned. Warning letters were also addressed to several medical practitioners regarding their "covering" of such women, and drawing their attention to the views expressed by the North of England Branch of the British Medical Association and the General Medical Council regarding such practices.

During 1917 the provision of a Trained Midwifery Service was decided upon by the County Council, and the scheme, which is the subject of a Special Report dated 12th July, 1917, was gradually developed and at the end of 1918 eleven trained midwives were in receipt of a subsidy from the County Council, the Local Government Board having given their general approval to the scheme.

LOCAL GOVERNMENT BOARD ENQUIRIES.

The following Local Government Board Inquiries were held during 1916, in respect of application from local authorities in the County relative to public health matters:—

1916.	Applicant.	Amount.	Purpose.	Result.
June 16	South Shields Rural District Council.	...	Authority to prepare under Part 2 of Housing, Town Planning, etc., Act, 1909, a town planning scheme with reference to an area situate wholly within the Rural District, in accord- ance with the Town Planning Proced ure Regulations (preparation of Schemes by Local Authorities) 1914.	Granted.

No Local Government Board Inquiries were held during the years 1917 and 1918.

There were no County Council Inquiries held during the period under review.

TABLE A.

TABLE GIVING POPULATION, BIRTH-RATE, DEATH-RATE, &c., WITHIN THE URBAN DISTRICTS OF THE ADMINISTRATIVE COUNTY OF DURHAM.

URBAN DISTRICTS	Medical Officer of Health	Area in Acres	Population 3 Years Past and Present	Births			Deaths			Birth-rate			Death-rate			Zymotic death-rate			Infant Mortality rate per 1,000 Births			Plthisis death-rate			Total Tuberculosis death-rate			Lung Diseases death-rate			Number of Cases Notified			Hospital Accommodation			Number of cases removed to Isolation Hospital			Deaths occurring within District, excluded			Deaths occurring outside District included			URBAN DISTRICTS		
				1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918			1916 1917 1918								
BOROUGHS.																																																
Durham	A. M. Vann, M.R.C.S., D.P.H.	1066	18030	376	287	288	239	306	328	20·85	15·91	15·97	13·25	16·97	18·19	0·61	1·49	0·27	79	121	149	0·99	1·10	1·33	1·66	1·44	1·55	2·66	3·60	4·99	73	305	83	Yes.	9	26	18	86	102	73	20	24	18	BOROUGHS.				
Hartlepool	George Jubbs, M.D., D.P.H.	735	19977	528	428	541	344	270	494	26·43	24·92	27·08	17·21	13·51	21·72	0·35	0·70	2·85	113	100	162	1·41	1·00	1·65	1·75	1·45	2·25	3·50	2·50	4·80	124	495	403	Yes.	5	6	46	30	43	40	31	39	Hartlepool					
Jarrow	C. Franks, M.D., D.P.H.	783	33551	1075	1018	1058	610	573	717	32·04	30·34	31·53	18·18	17·07	21·37	0·77	1·25	0·83	111	105	111	1·69	1·99	2·23	2·59	2·71	2·83	4·70	3·42	5·15	825	1685	424	Yes.	90	99	50	10	8	7	80	104	Jarrow					
Stockton	Thomas Horne, M.D., D.P.H.	5465	59311	1477	1335	1470	948	1086	1191	24·90	22·50	24·78	15·98	18·31	20·08	0·80	2·30	1·90	108	130	102	1·41	1·33	1·45	1·90	2·14	1·88	3·20	3·64	4·09	990	2160	1605	Yes.	145	165	204	26	30	32	51	45	Stockton					
URBAN DISTRICTS.																																																
Annfield Plain	W. M. Morrison, L.R.C.P.	3489	18143	450	408	411	224	207	244	24·80	22·48	22·65	12·34	11·40	13·14	0·93	0·66	1·43	106	102	85	0·66	0·93	0·99	1·21	1·59	1·43	2·31	1·65	1·81	148	491	346	Yes.	73	77	87	...	3	21	34	34	Annfield Plain					
Barnard Castle	C. H. Welford, M.D.	560	4872	99	57	58	76	64	83	20·32	11·69	11·90	15·59	13·13	17·03	0·82	0·41	0·82	101	52	86	0·61	0·82	1·43	0·82	1·23	2·05	2·25	2·25	2·46	38	64	162	Yes.	18	1	6	7	11	6	7	7	Barnard Castle					
Benfieldside	Wm. Allen, M.D.	1325	4670	189	171	231	114	97	120	21·80	19·72	20·64	13·14	11·18	13·84	1·61	0·46	1·03	179	122	112	1·15	0·92	1·03	1·26	1·26	1·38	1·49	1·84	2·99	184	242	119	Yes.	62	17	70	83	36	27	17	12	11	Benfieldside				
Bishop Auckland	T. A. McCullagh, M.R.C.S.	691	14508	307	251	292	183	202	264	21·16	17·30	20·12	12·61	13·92	18·19	1·03	1·44	0·75	91	111	119	1·24	1·24	1·65	1·51	2·27	1·92	3·10	1·35	376	87	Yes.	21	16	17	73	72	83	19	14	Bishop Auckland							
Blaydon	H. Morrison, M.B., B.S., B.H.	9314	36093	895	765	880	408	372	508	24·79	21·19	24·38	11·30	10·30	14·07	0·99	1·02	1·32	110	125	134	0·88	0·96	0·94	1·38	1·27	1·13	1·89	1·94	3·26	356	813	820	Yes.	172	39	117	10	14	15	35	38	Blaydon					
Brandes & Blyth	Henry Smith, M.D.	6069	18408	536	430	473	245	274	274	20·11	23·33	25·69	13·30	14·88	14·88	0·86	2·60	1·41	147	158	93	0·43	1·14	0·54	0·70	1·41	1·08	2·47	2·06	4·23	156	525	217	Yes.	91	67	47	3	3	7	23	30	Brandes & Blyth					
Chester-le-Street	D. Duncan, M.B.	2511	13827	351	331	370	195	197	260	22·17	20·91	23·37	12·32	12·44	16·42	1·32	1·20	1·20	99	117	118	0·75	1·07	0·69	1·70	1·57	0·94	2·02	1·57	1·64	170	483	103	Yes.	28	23	18	52	52	42	15	14	Chester-le-Street					
Consett	A. D. M. Macintyre, M.B.	1005	11751	269	270	273	187	193	200	22·89	22·97	23·32	15·91	16·42	17·02	1·78	1·02	1·19	111	107	117	1·36	1·36	0·85	1·87	1·70	1·10	2·80	3·31	3·99	136	170	45	Yes.	89	?	?	1	2	2	24	16	Consett					
Crook	A. Mackay, M.D.	4056	12596	336	278	314	173	153	267	26·67	22·07	24·92	13·73	12·14	21·19	0·95	1·11	0·87	151	86	140	0·55	0·71	1·19	1·03	1·66	1·42	1·74	1·90	3·65	141	181	121	Yes.	103	62	59	1	3	11	15	17	Crook					
Felling	Wm. E. Peacock, M.D., B.H.	2684	25910	705	593	634	395	393	467	27·20	22·80	24·46	15·24	15·16	18·02	1·35	1·27	1·46	86	126	140	1·81	1·73	1·46	2·43	2·58	1·73	2·23	2·62	2·89	3·35	887	136	Yes.	95	34	15	6	3	3	52	57	Felling					
Hebburn	E. E. Norman, M.B., B.S.	1241	22057	736	694	743	350	411	506	33·36	31·46	33·68	15·86	18·63	22·94	1·27	2·94	1·63	108	122	122	1·04	1·04	2·40	1·76	2·04	3·35	2·99	3·94	3·44	420	813	220	Yes.	95	34	15	6	3	3	52	57	Hebburn					
Henton-le-Hole	R. Macleod, M.B.	1617	16391	481	397	427	229	262	289	29·34	24·22	26·05	13·97	15·98	17·63	0·91	1·95	0·97	124	153	121	1·03	0·73	1·52	2·07	1·64	2·31	2·13	2·31	2·13	241	1197	398	Yes.	131	100	55	8	8	13	43	50	Henton-le-Hole					
Houghton-le-Spring	W. Barkes, M.D.	1551	10462	228	212	354	140	115	161	21·79	20·26	23·83	13·38	10·99	15·38	1·05	0·95	0·67	109	89	70	0·57	0·57	0·76	1·33	1·05	1·05	2·07	1·24	1·81	83	104	76	Yes.	41	12	82	1	2	2	25	22	Houghton-le-Spring					
Leadgate	Wm. Allen, M.D.	1856	5103	153	116	148	74	63	78	29·98	22·73	29·00	14·50	12·34	15·28	2·93	0·97	1·56	117	120	67	0·78	0·58	1·17	0·97	1·76	2·35	2·74	3·13	51	70	20	Yes.	24	17	12</td												

Deaths occurring within (excluded).		Deaths occurring outside District included.			URBAN DISTRICTS.	
917	1918	1916	1917	1918	BOROUGHs.	
102	73	20	24	18	Durham	
43	40	47	31	39	Hartlepool	
8	7	80	104	75	Jarrow	
30	32	51	58	45	Stockton	
					URBAN DISTRICTS.	
...	3	21	34	34	Annfield Plain	
7	11	6	6	7	Barnard Castle	
36	27	17	12	11	Benfieldside	
72	83	19	14	11	Bishop Auckland	
14	15	35	38	19	Blaydon	
3	7	23	30	17	Brandon & Byshottles	
52	42	15	14	11	Chester-le-Street	
2	2	24	16	16	Consett	
...	3	11	15	17	Crook	
3	3	52	57	38	Felling	
8	13	43	50	39	Hebburn	
2	2	25	22	29	Hetton-le-Hole	
11	18	14	9	20	Houghton-le-Spring	

TABLE A1

TABLE GIVING THE DEATHS AT CERTAIN AGES AND FROM CERTAIN SPECIFIED CAUSES WITHIN THE URBAN DISTRICTS OF THE ADMINISTRATIVE COUNTY OF DURHAM.

NOTE.—All the above figures are taken from the County Medical Officer's Record.

uicide.	Other defined Diseases.			Diseases ill-defined or unknown.			URBAN DISTRICTS.		
	1917	1918	1916	1917	1918	1916	1917	1918	
...	1	59	84	66	4	3	2		Durham
...	...	68	45	76	2	1	1		Hartlepool
...	...	123	107	106	6	6	1		Jarrow
1	4	235	258	208	5	6	3		Stockton
...	1	53	49	37	3	3	...		Annfield Plain
...	...	20	18	19	...	1	...		Barnard Castle
...	...	33	29	23	1	...	...		Benfieldside
1	1	49	57	63	2	2	2		Bishop Auckland
5	1	85	68	71	5	1	1		Blaydon
3	...	57	48	45	...	1	...		Brandon & Byshottles
1	...	38	38	57	1	2	...		Chester-le-Street
...	1	44	45	40	1	1	1		Consett
...	1	35	35	26	...	1	...		Crook
2	04	07	05	0	0	0	0		...

TABLE B1.

giving the Deaths at Certain Ages and from Certain Specified Causes within the Rural Districts of the Administrative County of Durham.

The above figures are taken from the County Medical Officer's Records.

Other defined Diseases.		Diseases ill-defined or unknown		RURAL DISTRICTS.		
1916	1917	1918	1916	1917	1918	
86	178	198	12	5	3	Auckland
57	44	50	2	2	2	Barnard Castle
01	181	172	5	4	2	Chester-le-Street
29	40	45	2	4	3	Darlington
01	111	78	...	...	3	Durham
08	185	191	6	4	2	Easington
8	9	13	...	...	...	Hartlepool
83	67	64	...	1	...	Houghton
84	93	88	1	4	1	Lanchester
92	86	83	...	3	2	Sedgefield
53	69	62	1	1	1	South Shields
39	38	25	2	...	...	Stockton
117	103	91	1	1	2	Sunderland
57	54	29	1	2	8	Weardale
1315	1258	1189	33	31	24	TOTAL

